

WHAT IS CLAIMED IS:

1. A display device for dividing each frame into a number of subframes and displaying one of the subframes after another, said device comprising:

correction means for correcting a subframe signal representing one subframe by reference to another subframe signal representing another subframe, and

a display panel for displaying each said subframe in accordance with the subframe signal that has been corrected by the correction means.

2. The device of claim 1, wherein said correction means corrects a subframe signal, representing the first one of the subframes that make up a current frame, by reference to a subframe signal representing the last one of the subframes that make up the previous frame, and

wherein said correction means corrects a subframe signal, representing a non-first one of the subframes of the current frame, by reference to a subframe signal representing the previous one of the subframes of the current frame that has been displayed just before the non-first subframe.

③ The device of claim 1, wherein said correction means corrects a subframe signal, representing the first one of the subframes that make up a current frame, by reference to a subframe signal representing another one of the subframes of the current frame, the another subframe being equivalent to the last subframe of the previous frame, and

wherein said correction means corrects a subframe signal, representing a non-first one of the subframes of the current frame, by reference to a subframe signal representing the previous one of the subframes of the current frame that has been displayed just before the non-first subframe.

4. The device of claim 1, wherein before the first one of the subframes that make up each said frame is displayed or after the last one of the subframes of the frame has been displayed, a displayed subframe is refreshed in response to a signal having a preset level.

5. The device of claim 1, wherein before each of the subframes that make up each said frame is displayed, a displayed subframe is refreshed in response to a signal having a preset level.

6. The device of claim 1, wherein before a first one of the subframes that make up each said frame is displayed, a bypass subframe is displayed, the bypass subframe being prepared for second and third ones of the subframes, the second subframe having been displayed just before the first subframe, the third subframe being to be displayed next to the first subframe.

7. The device of one of claims 1 to 6, further comprising an image shifter for shifting the subframes,

wherein each pixel area on a projection plane is sequentially irradiated

with multiple light rays that have been modulated at mutually different pixel regions and that belong to respectively different wavelength ranges.

8. The device of one of claims 1 to 6, wherein the device divides each said frame into a number of subframes so that the subframes correspond to three mutually different wavelength ranges and displays the subframes on a projection plane by a time sequential method, thereby forming a color image on the projection plane.

9. The device of one of claims 1 to 6, wherein the device sequentially scans the display panel with multiple light rays belonging to mutually different wavelength ranges, thereby superimposing the subframes one upon another on a projection plane and irradiating each pixel area on the projection plane with the light rays that belong to the mutually different wavelength ranges and that have been modulated at the same pixel region of the display panel.

10. The device of claim 2, further comprising a memory for storing the subframe signal representing the last subframe of the previous frame at least until the first subframe of the current frame has been displayed.

11. The device of claim 2, further comprising a memory for storing the subframe signal representing the last subframe of the previous frame at least until the first subframe of the current frame has been stored.

12. The device of one of claims 1 to 6, further comprising storage means for storing subframe signals representing a plurality of frames thereon,

wherein each said subframe signal is written on, or read out from, the storage means on a frame-by-frame basis.

13. The device of one of claims 1 to 6, further comprising storage means for storing subframe signals representing a plurality of subframes thereon,

wherein the storage means comprises a plurality of memory areas that have been partitioned for the respective subframes.

14. The device of one of claims 1 to 6, wherein at least one additional voltage level, which is higher than the highest one of multiple voltage levels prepared to output a subframe signal yet to be corrected, is provided and used as a voltage level at which the corrected subframe signal is output.

15. The device of one of claims 1 to 6, wherein at least one additional voltage level, which is lower than the lowest one of multiple voltage levels prepared to output a subframe signal yet to be corrected, is provided and used as a voltage level at which the corrected subframe signal is output.

16. The device of one of claims 1 to 6, wherein the correction means consults a lookup table for subframe signals representing the previous and

current subframes, respectively, to correct the subframe signal representing the current subframe in accordance with the lookup table.

17. The device of claim 16, further comprising:

a nonvolatile memory on which data required for correcting the subframe signals has been stored;

means for reading out the data from the nonvolatile memory; and

a second memory on which the data that has been read out from the nonvolatile memory is storable,

wherein when the device starts to be driven, the data is transferred from the nonvolatile memory to the second memory to make the lookup table.

18. The device of one of claims 1 to 6, wherein the correction means corrects the subframe signal representing the current subframe to be displayed by performing an arithmetic operation on the subframe signal representing the subframe to be referred to and the subframe signal representing the current subframe to be displayed.

19. The device of claim 18, wherein the arithmetic operation is given by

$$SA'_n = SA_n + (SA_n - SA_{n-1})/M$$

where SA'_n is the corrected subframe signal, SA_n is the subframe signal representing the current subframe, SA_{n-1} is the subframe signal representing the subframe to be referred to and M is a positive number.

(20) The device of claim 19, wherein M is 2^n (where n is an arbitrary integer).

(21) The device of claim 19, wherein the magnitude of M is changed in accordance with the magnitude of $(SA_n - SA_{n-1})$.

22. The device of one of claims 1 to 6, wherein the subframe signal is a signal of q bits (where q is an integer equal to or greater than 2), and wherein high-order p bits of the q -bit signal (where p is an integer equal to or greater than 1 and $q > p$) are corrected.

23. The device of one of claims 1 to 6, wherein each said frame is divided into a number m of subframes, where m is an integer equal to or greater than 3, and

wherein n out of the m subframes (where n is an integer equal to or greater than 2 and $n < m$) are sequentially displayed within one frame interval.

24. The device of claim 23, wherein m is 3 and n is 2.

25. The device of claim 4 or 5, wherein the device conducts a display operation in accordance with a driving method for use to display the subframes and in response to the signal having the preset level.

26. The device of claim 4 or 5, wherein the displayed subframe is refreshed by supplying the signal having the preset level to all scan lines that make up the image.

27. The device of claim 25, wherein the signal having the preset level is corrected by using the subframe signal representing the subframe that has been displayed just before the current subframe.

28. The device of claim 25 or 26, wherein a subframe signal, representing the subframe that is displayed just after the displayed subframe has been refreshed, is corrected by using a refresh signal.

29. The device of claim 26, wherein a black image is formed by conducting the display operation in response to the signal having the preset level.

30. The device of claim 4 or 5, wherein while the device is conducting a display operation in response to the signal having the preset level, no display pixels are illuminated by a light source.

31. The device of claim 6, wherein the bypass subframe is displayed for a constant length of time.

32. The device of claim 6, wherein the bypass subframe is displayed for a variable length of time, which changes with the subframes that are displayed before and after the bypass subframe.

33. The device of claim 6, 31 or 32, wherein a subframe signal representing the bypass subframe is corrected by using the subframe signal representing the subframe that has been displayed just before the bypass subframe.

34. The device of claim 6, 31 or 32, wherein the subframe signal, representing the subframe to be displayed just after the bypass subframe, is corrected by using the subframe signal representing the bypass subframe.